CLAIMS

What is claimed is:

1. An optical pickup apparatus, comprising:

first and second light sources emitting first and second light beams, respectively, each light beam comprising a different wavelength;

first and second optical path converters changing optical paths of the first and second light beams, respectively;

an objective lens, arranged next to the first and second optical path converters, focusing a divergent light beam from one of the first and second optical path converters on a corresponding optical recording medium; and

a photodetector receiving the light beams from the first and second optical path converters after being reflected from the optical recording medium.

2. The optical pickup apparatus as claimed in claim 1, wherein at least one of the first and second optical path converters is a plate beam splitter to correct for aberration.

3. The optical pickup apparatus as claimed in claim 2, wherein one of the first and second light beams has a wavelength of about 650 nm and the other one of first and second light beams has a wavelength of about 780 nm.

4. The optical pickup apparatus as claimed in claim 2, further comprising a grating disposed between either the first light source and the first optical path converter or the second light source and the second optical path converter.

5. The optical pickup apparatus as claimed in claim 2, further comprising a condensing lens focusing the light beam output from the first optical path converter to the photodetector.

6. The optical pickup apparatus as claimed in claim 1, wherein one of the first and second light beams has a wavelength of about 650 nm and the other one of first and second light beams has a wavelength of about 780 nm.

7. The optical pickup apparatus as claimed in claim 1, further comprising a grating disposed between either the first light source and the first optical path converter or the second light source and the second optical path converter.

8. The optical pickup apparatus as claimed in claim 1, wherein the corresponding optical recording medium comprises a relatively thin disc or a relatively thick disc, where the first light source emits the first light beam having a wavelength of about 650 nm suitable for the relatively thin disc and the second light source emits the second light beam having a wavelength of about 780 nm suitable for the relatively thick disc.

9. The optical pickup apparatus as claimed in claim 8, wherein the objective lens is a finite system objective lens, which enables the divergent light beam, from the first and second optical path converters, to be formed on the relatively thin disc or the relatively thick disc, respectively.

10. The optical pickup apparatus as claimed in claim 1, wherein the first and second light sources are disposed under the first and second optical path converters, respectively.

11. An optical pickup apparatus, comprising:

first and second light sources emitting first and second light beams, respectively, each light beam comprising a different wavelength;

first and second optical path converters changing optical paths of the first and second light beams, respectively;

an objective lens, arranged next to the first and second optical path converters, focusing a divergent light beam from one of the first and second optical path converters on one of a relatively thin disc and a relatively thick disc; and

a photodetector receiving the light beams from the first and second optical path converters after being reflected by the optical recording medium, wherein the optical pickup is exclusive of a collimating lens.

12. The optical pickup apparatus as claimed in claim 11, further comprising a grating disposed between either the first light source and the first optical path converter or the second light source and the second optical path converter.

13. The optical pickup apparatus as claimed in claim 11, wherein the first light source emits the first light beam having a wavelength of about 650 nm suitable for the relatively thin disc and the second light source emits the second light beam having a wavelength of about 780 nm suitable for the relatively thick disc.

14. The optical pickup apparatus as claimed in claim 13, wherein the objective lens is a finite system objective lens, which enables the divergent light beam, from the first and second optical path converters, to be formed on the relatively thin disc or the relatively thick disc, respectively.

15. The optical pickup apparatus as claimed in claim 11, wherein the first and second light sources are disposed under the first and second optical path converters, respectively.

16. An optical pickup apparatus, comprising:

first and second light sources emitting first and second light beams, respectively, each light beam comprising a different wavelength;

first and second optical path converters changing optical paths of the first and second light beams, respectively;

a reflection mirror, disposed next to the first optical path converter or the second optical path converter, to change the optical path of one of the first and second light beams;

an objective lens, arranged between the reflection mirror and a corresponding optical recording medium, focusing a divergent light beam from one of the first and second optical path converters on the corresponding optical recording medium; and

a photodetector receiving the light beams from the first and second optical path converters after being reflected from the optical recording medium.

17. The optical pickup apparatus as claimed in claim 16, wherein at least one of the first and second optical path converters is a plate beam splitter to correct for aberration.

18. The optical pickup apparatus as claimed in claim 17, wherein one of the first and second light beams has a wavelength of about 650 nm and the other one of first and second light beams has a wavelength of about 780 nm.

19. The optical pickup apparatus as claimed in claim 16, wherein one of the first and second light beams has a wavelength of about 650 nm and the other one of first and second light beams has a wavelength of about 780 nm.

20. The optical pickup apparatus as claimed in claim 16, wherein the corresponding optical recording medium comprises a relatively thin disc or a relatively thick disc, where the first light source emits the first light beam having a wavelength of about 650 nm suitable for the relatively thin disc and the second light source emits the second light beam having a wavelength of about 780 nm suitable for the relatively thick disc.

21. The optical pickup apparatus as claimed in claim 20, wherein the objective lens is a finite system objective lens, which enables the divergent light beam, from the first and second optical path converters, to be formed on the relatively thin disc or the relatively thick disc, respectively.

22. The optical pickup apparatus as claimed in claim 16, wherein the first and second light sources are disposed in a side direction of the first and second optical path converters.

23. An optical pickup apparatus, comprising:

first and second light sources emitting first and second light beams, respectively, each light beam comprising a different wavelength;

first and second optical path converters changing optical paths of the first and second light beams, respectively;

a reflection mirror, disposed next to the first optical path converter or the second optical path converter, to change the optical path of one of the first and second light beams;

an objective lens, arranged between the reflection mirror and a corresponding optical recording medium, focusing a divergent light beam from one of the first and second optical path converters on the corresponding optical recording medium; and

a photodetector receiving the light beams from the first and second optical path converters after being reflected from the optical recording medium, wherein the optical pickup is exclusive of a collimating lens.

24. An optical pickup apparatus, comprising:

first and second light sources emitting first and second light beams, respectively, each light beam comprising a different wavelength;

first and second optical path converters changing optical paths of the first and second light beams, respectively;

a finite system objective lens proximate to a corresponding optical recording medium, focusing a divergent light beam from one of the first and second optical path converters on the corresponding optical recording medium; and

a photodetector receiving the divergent light beam from the first and second optical path converters after being reflected from the optical recording medium.

25. The optical pickup apparatus as claimed in claim 24, wherein the optical pickup is exclusive of a collimating lens.

26. The optical pickup apparatus as claimed in claim 24, wherein at least one of the first and second optical path converters is a plate beam splitter to correct for aberration.

27. The optical pickup apparatus as claimed in claim 24, wherein one of the first and second light beams has a wavelength of about 650 nm and the other one of first and second light beams has a wavelength of about 780 nm.

28. The optical pickup apparatus as claimed in claim 24, wherein the corresponding optical recording medium comprises a relatively thin disc or a relatively thick disc, where the first light source emits the first light beam having a wavelength of about 650 nm suitable for the relatively thin disc and the second light source emits the second light beam having a wavelength of about 780 nm suitable for the relatively thick disc.